

PATENT**Application # 09/732,570****Attorney Docket # 1999P07535US04 (1009-064)****REMARKS**

The Examiner is respectfully thanked for the consideration provided to this application. Reconsideration of this application is respectfully requested in light of the following remarks.

Claims 52-58 and 84-96 are now pending in this application. Claims 52, 95, and 96 are in independent form.

I. The Indefiniteness Rejections

Each of claims 86-87 and 94 was rejected under 35 U.S.C. 112, second paragraph, as being indefinite. These rejections are respectfully traversed.

The present Office Action erroneously recites, "[p]er claims 86-87, and 94, the term 'adapted to' is unclear. It has been held that the recitation that an element is 'adapted to' perform a function is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense." In support of this assertion, the present Office Action cites *In re Hutchison*, 69 USPQ 138 (C.C.P.A. 1946). See Page 3.

Regarding indefiniteness rejections, the Federal Circuit has held that the law is clear that **if the claims, read in light of the specification, reasonably apprise those skilled in the art of the use and scope of the invention**, and if the language is as precise as the subject matter permits, the claims are definite under Section 112, second paragraph. *Shatterproof Glass Corp. v. Libbey-Owens Ford Co.*, 758 F.2d 613, 624, 225 USPQ 634, (Fed. Cir. 1985), *cert. dismissed*, 474 U.S. 976 (1985).

Applicants respectfully submit that no evidence has been presented that shows that claims 86-87, and 94, when "read in light of the specification," do not "reasonably apprise those skilled in the art of the use and scope of the invention." Thus, no *prima facie* case has been made that claims 86-87, and 94 are indefinite. Accordingly Applicants respectfully request reconsideration and withdrawal of the rejections of claims 86-87, and 94.

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In addition, the cited case from 1946 has been superseded by more recent case law. The Federal Circuit has interpreted the word “adapted” as preceding “functional language [that] **limits** the scope of these claims to devices that have the capability of” performing the recited function. *See, R.A.C.C. Indus., Inc. v. Stun-Tech, Inc.*, 178 F.3d 1309, 49 U.S.P.Q.2d 1793 (Fed. Cir. 1998) (*cert. denied*, 526 U.S. 1098 (1999)). Because such functional language serves as a claim limitation, a reference cited to support a rejection of a claim must describe a structure(s) capable of performing each claimed function preceded by the term “adapted.”

Further, in the case of *In re Land*, the CCPA ruled on a relevant claim that recited “said color-providing substances associated with at least the inner photosensitive emulsion layers are *adapted to be rendered diffusible* in said liquid composition *only after at least substantial development* of the next outermost photosensitive ... layer has occurred.” *See, In re Land*, 368 F.2d 866, 151 USPQ 621, 635 (C.C.P.A. 1966). The CCPA noted that the italicized portions of the claim were functional but held the claim patentable in view of the **functional limitations**.

“To the extent that [*In re Hutchison*’s] language is inconsistent with that in [*In re Land*], that inconsistency has already been *sub silentio* removed. The CCPA’s later decisions control because that court always sat *en banc*.” *In re Gosteli*, 872 F.2d 1009, 1011, 10 USPQ2d 1614, 1617 (Fed. Cir 1989).

In Ex parte Cullis, which was decided long after *In re Hutchison*, the Board reversed a rejection of a claim in which the phrase “adapted” preceded a functional limitation. *See Appeal No. 86-0561* (27 January 1989).

In yet another case, the Federal Circuit reversed an Examiner’s rejection of a patent claim due to the Examiner’s failure to provide patentable weight to **functional limitations**. *See In re Mills*, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

Thus, the assertion that “the recitation that an element is ‘adapted to’ perform a function is not a positive limitation but only requires the ability to so perform” and “does not constitute a limitation in any patentable sense” is contrary to current law. Accordingly, Applicants

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respectfully request the examination of each of claims 86-87 construed according to their proper functional limitations.

Thus, no *prima facie* case has been made that any of claims 86-87, and 94 are indefinite. Accordingly, Applicant respectfully requests that each rejection of claims 41-78 and 80 under 35 USC 112 be withdrawn.

II. The Anticipation Rejections

Each of claims 52-58 and 84-96 was rejected as anticipated under 35 U.S.C. 102(e). In support of the rejection, Logan (U.S. Patent No. 6,243,857) was cited. These rejections are respectfully traversed.

Logan fails to establish a *prima facie* case of anticipation. See MPEP 2131. To anticipate expressly, the "invention must have been known to the art in the detail of the claim; that is, all of the elements and limitations of the claim must be shown in a single prior art reference, arranged as in the claim". *Karsten Mfg. Corp. v. Cleveland Golf Co.*, 242 F.3d 1376, 1383, 58 USPQ2d 1286, 1291 (Fed. Cir. 2001). The single reference must describe the claimed subject matter "with sufficient clarity and detail to establish that the subject matter existed in the prior art and that its existence was recognized by persons of ordinary skill in the field of the invention". *Crown Operations Int'l, LTD v. Solutia Inc.*, 289 F.3d 1367, 1375, 62 USPQ2d 1917, 1921 (Fed. Cir. 2002). Moreover, the prior art reference must be sufficient to enable one with ordinary skill in the art to practice the claimed invention. *In re Borst*, 345 F.2d 851, 855, 145 USPQ 554, 557 (C.C.P.A. 1965), *cert. denied*, 382 U.S. 973 (1966); *Amgen, Inc. v. Hoechst Marion Roussel, Inc.*, 314 F.3d 1313, 1354, 65 USPQ2d 1385, 1416 (Fed. Cir. 2003) ("A claimed invention cannot be anticipated by a prior art reference if the allegedly anticipatory disclosures cited as prior art are not enabled.") The USPTO "has the initial duty of supplying the factual basis for its rejection." *In re Warner*, 379 F.2d 1011, 154 USPQ 173, 178 (C.C.P.A. 1967).

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Logan allegedly recites, “[w]hen a block has been selected, a breakpoint can be set at that block with an Insert/Remove Breakpoint tool bar button 182. This button toggles the breakpoint state at the currently selected block. It inserts a breakpoint, when no breakpoint exists, and removes an existing breakpoint. A color of a block that contains a breakpoint appears in red. Current flowchart execution stops when program flow reaches the block with the breakpoint, during the normal execution cycle. **Program flow stops** before the chart executes the breakpoint ...” See col. 8 line 62 through col. 9, line 4.

Each of independent claims 52, 95, and 96, from one of which each of claims 53-58, and 84-94 depends, recites **“without stopping execution of said entire user control program,** automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed.” Logan does not teach expressly or inherently **“without stopping execution of said entire user control program,** automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed”.

Accordingly, it is respectfully submitted that the rejection of claims 52, 95, and 96 is unsupported by Logan and should be withdrawn. Also, the rejection of each of claims 53-58 and 84-94, each ultimately depending from independent claim 52 is unsupported by Logan and also should be withdrawn.

B. Claim 56

Claim 56 recites, yet Logan does not teach or suggest, expressly or inherently, **“storing a table relating instructions to boolean expressions,** wherein said instructions are debugged with said boolean expressions.” In rejecting this claim, the present Office Action relies upon an applied section of Logan, at col. 4, lines 16-28, which allegedly recites:

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[r]eferring now to FIG. 2A a typical flowchart to be executed is illustrated to include flowchart blocks 40, 42, 44, 46, 48, 49, 50, 52, 53 and 54. These flowchart blocks define a portion of a continuous flowchart, in which during an interrupt, the flowchart block 52 may be highlighted by the aforementioned debugger. It can be seen in the FIG. 2B that an additional set of flowchart blocks 56 has been added in a loop illustrated by a line 58 to correct whatever was the problem with the initial program. Thereafter, upon recompiling, the program illustrated in the FIG. 2B is executed via the system of the FIG. 1, with the simple editing having been accomplished through the addition of an additional set of blocks in the displayed flowchart.

Applicant respectfully asks where this relied upon portion of Logan teaches or suggests, expressly or inherently, any table whatsoever? Where does this relied upon portion of Logan teach or suggest, expressly or inherently, “storing a table relating instructions to boolean expressions”? Where does this relied upon portion of Logan teach or suggest, expressly or inherently, “storing a table relating instructions to boolean expressions, wherein said instructions are debugged with said boolean expressions”?

Applicant respectfully submits that the subject matter claimed in claim 56 is not present in Logan. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 56.

C. Claim 57

Claim 57 recites, yet Logan does not teach or suggest, expressly or inherently, “**providing a table of pointers** to instructions of said original compiled code, wherein said instructions are located in memory during debugging.”

The present Office Action relies upon the same portion of Logan recited in section II.B., *supra*. Applicant respectfully asks where this relied upon portion of Logan teaches or suggests, expressly or inherently, any table whatsoever? Where does this relied upon portion of Logan teach or suggest, expressly or inherently, “**providing a table of pointers**”? Where does this

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relied upon portion of Logan teach or suggest, expressly or inherently, **“providing a table of pointers to instructions of said original compiled code, wherein said instructions are located in memory during debugging”**?

Applicant respectfully submits that the subject matter claimed in claim 57 is not present in Logan. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 57.

D. Claim 58

Claim 58 recites, yet Logan does not teach or suggest, expressly or inherently, **“limiting a data size of each compiled instruction, wherein execution of said instructions to be debugged is faster and memory required to store said instructions is reduced.”**

The present Office Action relies upon the same portion of Logan recited in section II.B., *supra*. Applicant respectfully asks where this relied upon portion of Logan teaches or suggests, expressly or inherently, **“limiting a data size of each compiled instruction, wherein execution of said instructions to be debugged is faster and memory required to store said instructions is reduced”**?

Applicant respectfully submits that the subject matter claimed in claim 58 is not present in Logan. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 58.

E. Claim 56

Claim 84 recites, yet Logan does not teach or suggest, expressly or inherently, **“providing a table relating instructions to boolean expressions, wherein said section of said program is debugged utilizing said boolean expressions.”**

The present Office Action relies upon the same portion of Logan recited in section II.B., *supra*. Applicant respectfully asks where this relied upon portion of Logan teaches or suggests, expressly or inherently, any table whatsoever? Where does this relied upon portion of Logan teach or suggest, expressly or inherently, **“providing a table relating instructions to boolean**

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expressions”? Where does this relied upon portion of Logan teach or suggest, expressly or inherently, **“providing a table relating instructions to boolean expressions, wherein said section of said program is debugged utilizing said boolean expressions”?**

Applicant respectfully submits that the subject matter claimed in claim 84 is not present in Logan. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 84.

F. Claim 85

Claim 85 recites, yet Logan does not teach or suggest, expressly or inherently, **“providing a table of pointers to instructions of said entire program.”**

The present Office Action relies upon the same portion of Logan recited in section II.B., *supra*. Applicant respectfully asks where this relied upon portion of Logan teaches or suggests, expressly or inherently, any table whatsoever? Where does this relied upon portion of Logan teach or suggest, expressly or inherently, **“providing a table of pointers”?** Where does this relied upon portion of Logan teach or suggest, expressly or inherently, **“providing a table of pointers to instructions of said entire program”?**

Applicant respectfully submits that the subject matter claimed in claim 85 is not present in Logan. Accordingly, Applicant respectfully requests withdrawal of the rejection of claim 85.

G. Claim 86

Claim 86 recites, yet Logan does not teach or suggest, expressly or inherently, **“providing a machine code instruction adapted to save a power flow status associated with said section of said program.”** The present Office Action fails to even allege that Logan teaches or suggests the subject matter comprised in claim 86. Accordingly, it is respectfully submitted that the rejection of claim 86 is unsupported by Logan and should be withdrawn.

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Claim 87 recites, yet Logan does not teach or suggest, expressly or inherently, “providing a machine code instruction adapted to **save an operand value associated with said section of said program.**” The present Office Action fails to even allege that Logan teaches or suggests the subject matter comprised in claim 87. Accordingly, it is respectfully submitted that the rejection of claim 87 is unsupported by Logan and should be withdrawn.

I. Claim 88

Each of claims 88 and 90 recite, yet Logan does not teach or suggest, expressly or inherently, “**comparing a scan count status word to a current value of a scan counter to determine that said status came from a single scan cycle.**” The present Office Action fails to even allege that Logan teaches or suggests the subject matter comprised in claim 86. Accordingly, it is respectfully submitted that the rejection of each of claims 88 and 90 is unsupported by Logan and should be withdrawn.

J. Claim 89

Claim 89 recites, yet Logan does not teach or suggest, expressly or inherently, “**copying a scan counter value to a scan count status word to determine that said status came from a single scan cycle.**” The present Office Action fails to even allege that Logan teaches or suggests the subject matter comprised in claim 86. Accordingly, it is respectfully submitted that the rejection of claim 89 is unsupported by Logan and should be withdrawn.

K. Claim 90

Claim 90 recites, yet Logan does not teach or suggest, expressly or inherently, “**clearing a flag in a buffer if said scan count status word is different from said current value of said scan counter.**” The present Office Action fails to even allege that Logan teaches or suggests the

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subject matter comprised in claim 86. Accordingly, it is respectfully submitted that the rejection of claim 90 is unsupported by Logan and should be withdrawn.

L. Claim 94

Claim 94 recites, yet Logan does not teach or suggest, expressly or inherently, **“determining a status window size by a number of operand values returned from an execution of said section of said program, said status window adapted to display said status of said instruction.”** The present Office Action fails to even allege that Logan teaches or suggests the subject matter comprised in claim 86. Accordingly, it is respectfully submitted that the rejection of claim 90 is unsupported by Logan and should be withdrawn.

III. The Obviousness Rejections

Each of claims 86-90 and 94 was rejected under 35 U.S.C. 103(a) as being unpatentable over Logan (U.S. Patent No. 6,243,857). These rejections are respectfully traversed.

A. *Prima Facie* Criteria

None of the applied portions of the references relied upon in the Office Action, whether considered alone or in combination, establish a *prima facie* case of obviousness. “To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant’s disclosure.” See MPEP 2143.

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Moreover, the USPTO “has the initial duty of supplying the factual basis for its rejection.” *In re Warner*, 379 F.2d 1011, 154 USPQ 173, 178 (C.C.P.A. 1967).

B. Missing Claim Limitations

As stated above, claim 52, upon which each of claims 86-90 and 94 depend, recites, *inter alia*, “**without stopping execution of said entire user control program**, automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed.” Logan does not teach expressly or inherently “**without stopping execution of said entire user control program**, automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed”.”. The applied portions of Logan do not teach or suggest, expressly or inherently, ““**without stopping execution of said entire user control program**, automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed.” Logan does not teach expressly or inherently “**without stopping execution of said entire user control program**, automatically jumping to said second section of said memory during real time execution of said entire user control program when an instruction indicated to be debugged is to be executed.”

Thus, even if there were motivation or suggestion to modify the applied portions of the reference relied upon in the Office Action (an assumption that is respectfully traversed), and even if there were a reasonable expectation of success in modifying the applied portions of reference relied upon in the Office Action (another assumption that is respectfully traversed), the applied portions of the reference relied upon in the Office Action, **as attempted to be modified**, still do not teach or suggest, expressly or inherently, every limitation of the independent claims, and consequently fail to establish a *prima facie* case of obviousness. Consequently, for at least

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the reasons mentioned above, reconsideration and withdrawal of these rejections is respectfully requested.

C. No Motivation or Suggestion to Combine Applied References

“The examiner bears the initial burden of factually supporting any *prima facie* conclusion of obviousness.” MPEP 2142. According to the Federal Circuit the “mere fact that the prior art may be modified in the manner suggested by the Examiner does not make the modification obvious unless the prior art suggested the **desirability** of the modification.” *In re Fritch*, 972 F.2d 1260, 23 USPQ 2d 1780, 1783-1784 (Fed. Cir. 1992) (citing *In re Fine*, 837 F.2d 1071, 1075, 5 USPQ 2d 1596, 1600 (Fed. Cir. 1988) (emphasis added)). In that same case, the Federal Circuit further held that it “is impermissible to use the claimed invention as an instruction manual or ‘template’ to piece together the teachings of the prior art so that the claimed invention is rendered obvious. This court has previously stated that ‘[o]ne cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention.’” *Id.*, 23 USPQ 2d at 1784.

Instead, “**obviousness requires proof** ‘that the skilled artisan . . . would select the elements from the cited prior art references for combination in the manner claimed’”. *In re Scott E. Johnston* (Fed. Cir. 30 January 2006) (quoting *In re Rouffet*, 149 F.3d 1350, 1358 (Fed. Cir. 1998) (emphasis added)). To make that proof, the Office Action must present sufficient evidence of some “‘suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to’”:

1. “‘select the references’”;
2. “‘select the teachings of [the] separate references’”; and
3. “‘combine [those teachings] in the way that would produce the claimed invention’”.

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Id. See also *In re Dance*, 160 F.3d 1339, 1343 (Fed. Cir. 1998) (discussing the “the test of whether it would have been obvious to select **specific** teachings and combine them as did the applicant”) (emphasis added); and *Interconnect Planning Corp. v. Feil*, 774 F.2d 1132, 1143 (Fed. Cir. 1985) (“When prior art references require selective combination by the court to render obvious a subsequent invention, there must be some reason for the combination other than the hindsight gleaned from the invention itself.”).

Moreover, “[w]hen determining the patentability of a claimed invention which combines two known elements, the question is whether there is something in the prior art as a whole to **suggest the desirability**, and thus the obviousness, of making the combination.” *Akamai Techs. v. Cable & Wireless Internet Servs.*, 344 F.3d 1186, 68 USPQ 2d 1186 (Fed. Cir. 2003) (emphasis added).

The Office Action presents **no evidence of anything** “in the prior art as a whole to suggest the **desirability**, and thus the obviousness, of making the **combination**.” Moreover, the Office Action presents **no evidence of any** “suggestion, motivation, or teaching in the prior art that would have led a person of ordinary skill in the art to”:

1. “select the references”;
2. “select the teachings of [the] separate references”; or
3. “combine [those teachings] in the way that would produce the claimed invention”.

The present Office Action presents no evidence whatsoever that any of the applied portions of the references relied upon in the Office Action provide a suggestion or motivation for a combination with any of the other relied upon references. Instead, regarding the proffered combinations, the present Office Action recites regarding each of the rejections, at Pages 8-11:

“it would have been obvious for one having ordinary skill in the pertinent art to modify the system of Logan to be sued for other possible control instruction. The modification would be obvious because one having ordinary skill in the art would be

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motivated to control various processes by a programmable controller and debug various programs for controlling the operations of a machine.”

Thus, the present Office Action fails to provide any evidence that the prior art provides any suggestion or motivation to modify the applied portions of Logan. Accordingly, the modification of Logan is impermissible to arrive at the claimed subject matter of each of claims 86-90 and 94.

D. Obviousness Summary

Thus, there is demonstration of a proper motivation or suggestion to modify the applied portions of Logan to arrive at the claimed subject matter and, even if combinable or modifiable, the applied portions of references relied upon in the Office Action do not teach or suggest, expressly or inherently, every limitation of the claims.

Because no *prima facie* rejection of any independent claim has been presented, no *prima facie* rejection of any dependent claim can be properly asserted. Consequently, reconsideration and withdrawal of these rejections is respectfully requested.

It is respectfully noted that because the Office Action fails to set forth sufficient facts to provide a *prima facie* basis for the rejections, any future rejection based on the applied reference will necessarily be factually based on an entirely different portion of that reference, and thus will be legally defined as a “new grounds of rejection.” Consequently, any Office Action containing such rejection can not properly be made final. *See In re Wiechert*, 152 U.S.P.Q. 247, 251-52 (C.C.P.A. 1967) (defining “new ground of rejection” and requiring that “when a rejection is factually based on an entirely different portion of an existing reference the appellant should be afforded an opportunity to make a showing of unobviousness vis-a-vis such portion of the reference”), and *In re Warner*, 379 F.2d 1011, 154 USPQ 173, 178 (C.C.P.A. 1967) (the USPTO “has the initial duty of supplying the factual basis for its rejection”).

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A potential statement of reasons for the indication of allowable subject matter is:

“none of the references of record alone or in combination disclose or suggest the combination of limitations found in the independent claims. Namely, claims 52-58 and 84-96 are allowable because none of the references of record alone or in combination disclose or suggest ‘regarding an entire program stored in a first section of memory and executed by a programmable controller, while said entire program is executing and without significantly interfering with execution timing of said program: displaying a section of said program indicated by a user to be debugged, said section comprising fewer instructions than said entire program; compiling said section of said program to be debugged in a second section of memory jumping to said another section of said memory during execution of said program when an instruction indicated to be debugged is to be executed; and capturing a status of said instruction as it is executed.’”

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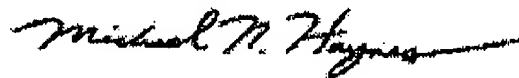
CONCLUSION

It is respectfully submitted that, in view of the foregoing amendments and remarks, the application as amended is in clear condition for allowance. Reconsideration, withdrawal of all grounds of rejection, and issuance of a Notice of Allowance are earnestly solicited.

The Office is hereby authorized to charge any additional fees or credit any overpayments under 37 C.F.R. 1.16 or 1.17 to Deposit Account No. 50-2504. The Examiner is invited to contact the undersigned at 434-972-9988 to discuss any matter regarding this application.

Respectfully submitted,

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